N 42Y/984

Preprint from the 1984

BUREAU OF MINES MINERALS YEARBOOK

The Mineral Industry of New York

NEWARK PUBLIC LIBRARY

APR 1 8 1986

U. S. GOVT. PUBS.
DEPOSITORY 378

UNITED STATES DEPARTMENT OF THE INTERIOR

I 28.37/a 2+

READEX MICROPRINT best copy available

UNITED STATES DEPARTMENT OF THE INTERIOR • Donald Paul Hodel, Secretary

BUREAU OF MINES • Robert C. Horton, Director

This publication is a chapter from the current Bureau of Mines Minerals Yearbook, comprising *Volume I, Metals and Minerals; Volume II, Area Reports: Domestic; Volume III, Area Reports: International.* The separate volumes of the Yearbook are sold by the Superintendent of Documents, Washington, D.C. 20402.

The Mineral Industry of New York

This chapter has been prepared under a Memorandum of Understanding between the Bureau of Mines, U.S. Department of the Interior, and the New York State Education Department, New York Geological Survey, for collecting information on all nonfuel minerals.

By Donald K. Harrison[1]

The value of New York's nonfuel mineral production in 1984 was $612.5 million, an increase of $109 million over that of 1983. Leading mineral commodities produced in terms of value were portland cement, crushed stone, salt, construction sand and gravel, zinc, lime, wollastonite, and dimension stone. Nationally, the State ranked 12th in the value of nonfuel minerals produced.

New York was the only State in which emery was mined and accounted for most of the Nation's wollastonite production. The State ranked first in the production of synthetic calcium chloride and synthetic graphite; second in zinc; third in salt, primary aluminum, selenium, and garnet; and fourth in talc and lead.

Table 1.—Nonfuel mineral production in New York[1]

Mineral		1983		1984	
		Quantity	Value (thousands)	Quantity	Value (thousands)
Clays[2]	thousand short tons	371	$869	543	$2,435
Gem stones		NA	30	NA	30
Lead (recoverable content of ores, etc.)	metric tons	1,299	621	W	W
Peat	thousand short tons	18	W	W	W
Salt	do.	4,859	100,119	5,644	123,755
Sand and gravel:					
Construction	do.	e18,700	e54,200	25,968	80,866
Industrial	do.	W	W	25	260
Silver (recoverable content of ores, etc.)	thousand troy ounces	33	379	W	W
Stone:					
Crushed	thousand short tons	r31,991	r134,752	e33,100	e135,000
Dimension	do.	24	4,310	e15	e4,271
Zinc (recoverable content of ores, etc.)	metric tons	56,748	51,783	W	W
Combined value of cement, clays (ball clay), emery, garnet (abrasive), gypsum, lime, talc, titanium concentrate (ilmenite), wollastonite, and values indicated by symbol W		XX	156,351	XX	265,873
Total		XX	r503,414	XX	612,490

eEstimated. rRevised. NA Not available. W Withheld to avoid disclosing company proprietary data; value included with "Combined value" figure. XX Not applicable.

[1]Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

[2]Excludes ball clay; value included with "Combined value" figure.

Table 2.—Value of nonfuel mineral production in New York, by county[1]

(Thousands)

County	1982	1983	Minerals produced in 1983 in order of value
Albany	W	W	Cement, stone (crushed), clays, stone (dimension).
Allegany	$1,338	(2)	
Broome	W	W	Clays, peat.
Cattaraugus	6,582	W	Peat.
Cayuga	401	(2)	
Chautauqua	572	(2)	
Chemung	552	(2)	
Chenango	643	(2)	
Clinton	338	W	Stone (crushed).
Columbia	647	W	Do.
Cortland	1,009	(2)	
Delaware	39	W	Stone (dimension), stone (crushed).
Dutchess	W	W	Stone (crushed), peat.
Erie	W	W	Stone (crushed), clays.
Essex	13,234	W	Wollastonite, stone (dimension), titanium, abrasives.
Franklin	148	$172	Stone (crushed), stone (dimension).
Fulton	378	(2)	
Genesee	W	W	Gypsum, stone (crushed).
Greene	W	W	Cement, stone (crushed).
Herkimer	852	W	Stone (crushed).
Jefferson	705	W	Do.
Lewis	W	W	Wollastonite, stone (crushed).
Livingston	W	W	Salt, stone (crushed).
Madison	99	1,458	Stone (crushed).
Monroe	1,121	W	Do.
Montgomery	W	3,566	Do.
Nassau	W	(2)	
Niagara	(2)	W	Stone (crushed).
Oneida	940	W	Stone (crushed), sand (industrial).
Onondaga	34,184	W	Lime, stone (crushed), salt, clays.
Ontario	674	W	Stone (crushed).
Orange	W	W	Stone (crushed), clays.
Orleans	W	W	Stone (crushed), stone (dimension).
Oswego	830	(2)	
Otsego	284	(2)	
Putnam	(2)	W	Stone (crushed).
Rensselaer	2,212	W	Do.
Rockland	(2)	17,709	Do.
St. Lawrence	W	W	Zinc, talc, stone (crushed), lead, silver.
Saratoga	245	W	Stone (crushed), sand (industrial).
Schenectady	W	(2)	
Schoharie	W	W	Cement, stone (crushed).
Schuyler	W	W	Salt.
Seneca	W	W	Stone (crushed), peat.
Steuben	1,432	W	Stone (crushed).
Suffolk	3,998	(2)	
Sullivan	362	W	Stone (crushed).
Tioga	952	(2)	
Tompkins	W	W	Salt, stone (crushed), stone (dimension).
Ulster	W	W	Stone (crushed), clays.
Warren	W	W	Cement, stone (crushed), abrasives.
Washington	158	W	Stone (crushed), stone (dimension).
Wayne	737	W	Stone (crushed).
Westchester	W	W	Abrasives, peat, stone (dimension).
Wyoming	W	W	Salt.
Yates	89	(2)	
Undistributed[4]	291,351	426,308	
Sand and gravel (construction)	XX	e54,200	
Stone:			
Crushed	e132,800	XX	
Dimension	r e3,952	XX	
Total	r503,858	5503,414	

eEstimated. rRevised. W Withheld to avoid disclosing company proprietary data; included with "Undistributed."
XX Not applicable.

[1]No production of nonfuel mineral commodities was reported for counties not listed.

[2]Construction sand and gravel was produced; data not available by county. Total State value is shown separately under "Sand and gravel (construction)."

[3]Crushed and dimension stone was produced; data not available by county. Total State values are shown separately under "Stone."

[4]Includes gem stones that cannot be assigned to specific counties and values indicated by symbol W.

[5]Data do not add to total shown because of independent rounding.

Table 3.—Indicators of New York business activity

		1982[r]	1983	1984[p]
Employment and labor force, annual average:				
Population	thousands	17,567	17,663	17,735
Total civilian labor force	do.	7,991	8,051	8,089
Unemployment	do.	684	688	584
Employment (nonagricultural):				
Mining total[1]	do.	6.5	6.7	6.8
Metal mining[2]	do.	1.3	1.2	NA
Nonmetallic minerals except fuels[2]	do.	3.6	3.6	NA
Coal mining[2]	do.	(3)	(3)	NA
Oil and gas extraction[2]	do.	2.5	2.7	NA
Manufacturing total	do.	1,352.5	1,302.4	1,330.2
Primary metal industries	do.	40.6	35.4	34.1
Stone, clay, and glass products	do.	33.0	31.8	32.2
Chemicals and allied products	do.	66.8	64.7	65.6
Petroleum and coal products	do.	6.0	6.2	5.6
Construction	do.	219.6	230.8	251.8
Transportation and public utilities	do.	422.0	406.7	417.6
Wholesale and retail trade	do.	1,468.4	1,503.4	1,567.9
Finance, insurance, real estate	do.	670.6	686.7	703.5
Services	do.	1,821.3	1,876.9	1,962.0
Government and government enterprises	do.	1,293.7	1,299.6	1,317.3
Total[4]	do.	7,254.6	7,313.3	7,557.0
Personal income:				
Total	millions	$214,974	$231,054	$253,934
Per capita		$12,237	$13,081	$14,318
Hours and earnings:				
Total average weekly hours, production workers		38.8	39.3	NA
Total average hourly earnings, production workers		$8.35	$8.85	NA
Earnings by industry:				
Farm income	millions	$537	$476	$528
Nonfarm	do.	$156,652	$169,781	$186,351
Mining total	do.	$288	$289	$289
Metal mining	do.	$38	$45	$37
Nonmetallic minerals except fuels	do.	$89	$91	$105
Coal mining	do.	$1	$1	$1
Oil and gas extraction	do.	$161	$151	$146
Manufacturing total	do.	$33,805	$34,846	$37,453
Primary metal industries	do.	$1,238	$1,142	$1,130
Stone, clay, and glass products	do.	$842	$896	$942
Chemicals and allied products	do.	$2,011	$2,055	$2,228
Petroleum and coal products	do.	$965	$1,051	$982
Construction	do.	$5,726	$6,547	$7,604
Transportation and public utilities	do.	$13,689	$13,636	$14,727
Wholesale and retail trade	do.	$24,144	$25,978	$28,639
Finance, insurance, real estate	do.	$17,743	$20,677	$22,877
Services	do.	$36,527	$41,001	$45,688
Government and government enterprises	do.	$24,292	$26,325	$28,541
Construction activity:				
Number of private and public residential units authorized		25,369	37,958	43,160
Value of nonresidential construction	millions	$2,151.5	$1,644.3	$2,105.2
Value of State road contract awards	do.	$561.0	$570.0	$979.9
Shipments of portland and masonry cement to and within the State	thousand short tons	2,362	2,533	2,785
Nonfuel mineral production value:				
Total crude mineral value	millions	$503.9	$503.4	$612.5
Value per capita		$29	$29	$35

[p]Preliminary. [r]Revised. NA Not available.
[1]Bureau of Labor Statistics, U.S. Department of Labor; totals may not add because of inclusion of data from other sources.
[2]Bureau of Economic Analysis, Regional Economic Measurement Division, U.S. Department of Commerce.
[3]Less than 50 employees.
[4]Data may not add to totals shown because of independent rounding.

Sources: U.S. Department of Commerce, U.S. Department of Labor, Highway and Heavy Construction Magazine, and U.S. Bureau of Mines.

Figure 1.—Principal mineral producing localities in New York.

Trends and Developments.—Environmental issues continued to be major topics of concern in the State. One key issue has been the acid rain controversy and its effects on water quality and vegetation, primarily in the Adirondack Mountains. In an effort to combat the problem, the State passed the New York State Acid Deposition Control Act and has conducted or authorized numerous studies on the controversial subject. In addition, Maine, New York, and Pennsylvania filed petitions with the Environmental Protection Agency (EPA) to impose stricter sulfur dioxide levels on seven Midwestern States. The petitions, filed in 1980 and 1981, stated that emissions from Midwestern power and industrial plants were preventing the Northeastern States from meeting air quality standards. EPA denied the petitions, however, noting that the States that filed the petitions "have not made a persuasive technical case that the existing requirements of the Clean Air Act were being violated by interstate transport of air pollutants."

In an environmentally related issue regarding mineral resources, the State Department of Health began a widespread investigation to determine whether workers in the talc mines of St. Lawrence County were being disabled from exposure to toxic elements in the mines, including asbestos. However, controversy continued during the year as to whether or not to exclude talc from the definition of asbestos. There were conflicting opinions by both the Occupational Safety and Health Administration and the National Institute for Occupational Safety and Health as to how to classify the talc, which is composed basically of the mineral tremolite.

Legislation and Government Programs.—Near yearend, the New York State Acid Deposition Control Act was signed into law. The legislation required large decreases in sulfur dioxide and nitrogen oxide emissions and applied to all major steam electric plants and industrial plants in the State. It mandated the reduction of New York State's emissions by 12% or 100,000 tons by 1988 and by an additional 18% by the early 1990's. It was contingent upon no similar Federal plan being enacted.

In August, a new bonding requirement law was passed. It enacted new provisions fixing bonding or other financial security requirements for wells less than 6,000 feet in depth for which the New York Environ-

mental Conservation Department has issued permits on or after June 5, 1973. The bondng requirement law affected (1) oil pools or fields, (2) natural gas pools or fields, and (3) solution mining areas.

Near yearend, the Governor was planning to add a new dimension to the bottle law, which became effective in October 1983. The proposed legislation would enable the State to collect unrefunded 5-cent deposits from beverage distributors. According to State officials, New York State consumers failed to claim $54 million in deposits during the first 10 months after the bottle law was in force.

On a local level, the town of Olean passed an ordinance regulating strip mining and oil well drilling within the city limits, and at yearend, the town of Ulster completed revisions of the local mining ordinance. The revisions were expected to be voted on as the town's first local law of 1985 after a public hearing in January.

The New York State Geological Survey, which has operated continuously since 1836, has two basic functions: (1) to act as the geological research arm of the State Museum, and (2) to act as keeper of the State geologic map for provision of geological advice to the government, industry, and the public. In 1984, major projects continuing or under way were concerned with environmental and engineering or regional geologic studies. Projects under way in the environmental and engineering studies included (1) production of county bedrock maps for engineering purposes; (2) study of landslides in the Hudson River Valley, funded by the U.S. Geological Survey (USGS); (3) statewide evaluation of potential siting of low-level radioactive waste disposal; (4) statewide appraisal of data relevant to the siting of a high-level radioactive waste disposal in crystalline rock, funded by the U.S. Department of Energy; (5) geochemistry of glacial soils; and (6) study of Outer Continental Shelf petroleum development, funded by the Minerals Management Service.

Regional geologic studies included (1) subsurface stratigraphy of the Devonian Age rocks of central and western New York; (2) quadrangle mapping of the Adirondack Mountains at 1:24,000 and 1:62,000; (3) Cambro-Ordovician Age biostratigraphy, funded by the National Science Foundation; (4) regional structures of the Adirondack Mountains; (5) quaternary geologic mapping of New York at 1:250,000; and (6) cataloging of mineral resource localities in the Adirondacks, funded by the USGS.

During fiscal year 1984, the U.S. Bureau of Mines had 13 active contracts or grants in New York valued at $374,415. The contracts were awarded to educational institutions and industrial and consulting firms for mineral-related studies.

REVIEW BY NONFUEL MINERAL COMMODITIES

NONMETALS

Abrasives (Manufactured).—High-purity fused aluminum oxide was produced by Sohio Electro Minerals Co. and by the General Abrasives Div. of Dresser Industries Inc., both in Niagara Falls. General Abrasives also produced a small amount of high-purity fused aluminum oxide from abrasive-grade bauxite. Sohio Electro Minerals (formerly the Electrominerals Div. of The Carborundum Co.) was formed in 1983 when Carborundum consolidated with the Processed Mineral Sector of Sohio Chemical & Industrial Products Co.

Pellets Inc. produced cut wire shot for abrasive purposes at a plant in Tonawanda, Erie County.

Calcium Chloride (Synthetic).—New York ranked first among three States that produced synthetic calcium chloride. Allied Chemical Corp. recovered synthetic calcium chloride as a byproduct of soda ash production at its Solvay plant near Syracuse. The calcium chloride was used for ice and snow removal and as a dust suppressant.

Cement.—In 1984, cement was the leading nonfuel mineral produced in terms of value. Four companies operated five plants in the State. All five produced portland cement and three produced masonry cement. The four plants producing both portland and masonry were Lehigh Portland Cement Co. at Cementon, Atlantic Cement Co. Inc. at Ravena, Moore McCormack Resources Inc. at Glens Falls, and Independent Cement Corp. at Catskill. Moore McCormack also operated a second plant at Howes Cave but produced only portland cement there. In 1984, both shipments and value of portland cement increased 11% and 40%, respectively, compared with those of 1983. Shipments and value of masonry cement increased by 9% and 10%, respectively.

During the year, Lone Star Industries Inc. sold its Catskill cement plant and

distribution network to St. Lawrence Cement Inc. for $30 million. St. Lawrence Cement is a Canadian concern based in Mount Royal, Quebec, with a subsidiary, Independent Cement, in Albany. Because Independent distributed cement produced in Canada, it was barred from supplying Federal and State highway projects because they are covered by the "Buy America" restrictions of the Federal Surface Transportation Assistance Act of 1982. However, with the acquisition of the Catskill plant, Independent Cement was expected to bid again on State and Federal highway projects.

In May, a nationwide strike by workers against Lehigh, closed the Cementon plant to all but limited shipping. In June, however, the 130 Cementon plant employees went back to work pending negotiations with the company through a Federal mediator.

Clays.—In 1984, both common and ball clay were produced in the State. Common clay was produced by eight companies in six counties. Leading counties in order of output were Albany, Ulster, Onondaga, Broome, Orange, and Erie. A small amount of slip clay (statistically tallied as ball clay) was produced by one company, Industrial Mineral Products Inc. in Albany County. Both quantity and value of common clay increased substantially in 1984; output was 46% more than that of 1983, while value increased nearly threefold.

Emery.—New York continued to be the only State that produced emery. Two companies, De Luca Emery Mine Inc. and John Leardi Emery Mine, both operated mines near Peekskill in Westchester County. Production and value rebounded in 1984, increasing 48% and 53%, respectively, over those of 1983.

Garnet.—In 1984, two of the Nation's four garnet mines operated in the State. New York ranked third in production but second in value after Idaho. Barton Mines Corp. operated an open pit mine in Warren County and sold the garnet for use in coated abrasives, glass grinding and polishing, and metal lapping. The NYCO Div. of Processed Minerals Inc. operated a mine in Essex County and sold the material for use in sandblasting and in bonded abrasives. The recovered garnet at the NYCO operation was a byproduct of wollastonite mining.

Gem Stones.—Value of gem stones and mineral specimens collected by mineral dealers and amateur collectors in New York was estimated at $30,000 in 1984. Popular gem collecting localities included Gore Mountain near North Creek, Warren County; magnetite refuse areas of NL Industries Inc. near Tahawus, Essex County; and Herkimer County, where double-terminated clear quartz crystals are found in a dolomite matrix.

Graphite (Synthetic).—New York led the Nation in the production of synthetic graphite, accounting for about one-fourth of the U.S. output. Production amounted to 65,013 short tons, an 11% decrease compared with that of 1983. Four companies, all located in Niagara County, produced synthetic graphite. The four companies were Airco Carbon, a division of Airco Inc.; Carborundum's Graphite Products Div.; Great Lakes Carbon Corp.; and Union Carbide Corp., Carbon Products Div. Principal uses of the synthetic graphite were for electrodes, cathodes, anodes, crucibles and vessels, lubricants, and unmachined graphite shapes.

Gypsum.—United States Gypsum Co., the State's only producer, mined gypsum from its underground mine at Oakfield in Genesee County. In 1984, both output and value of crude gypsum increased appreciably compared with those of 1983. The crude gypsum mined at the Oakfield Mine and gypsum imported from Canada was calcined at two company-owned plants in Oakfield and at Stony Point, Rockland County. In terms of total output, the Stony Point plant ranked seventh of 71 plants that calcined gypsum in the United States.

Two other companies calcined imported gypsum in the State. National Gypsum Co. operated a plant in Rensselaer County, and Georgia-Pacific Corp. operated a plant in Buchanan, Westchester County. Calcined gypsum was primarily used for wallboard and plaster. State output and value of calcined gypsum increased somewhat compared with those of 1983.

The site of National Gypsum's former wallboard plant in Clarence, closed since 1982, was in the process of becoming the city's newest industrial park. The plant had been in operation for 50 years.

Iodine.—Crude iodine was shipped into the State by RSA Corp., Westchester County, and Sterling Organics U.S., Rensselaer County. RSA, the largest producer in New York, produced specialty organic chemicals. Sterling used the iodine for the manufacture of pharmaceuticals, catalysts, and sanitation products.

Lime.—One company, Allied Chemical, produced quicklime in 1984 at its Syracuse

Works plant in Onondaga County. In terms of total output, the plant was the Nation's sixth leading lime plant, down from third place in 1983. The quicklime was used for manufacturing synthetic soda ash. Both output and value remained essentially the same as those of 1983.

Mullite (Synthetic).—Carborundum, Niagara Falls, was the only producer of electric-furnace-fused mullite in New York. The mullite was primarily used by the steel industry for furnace linings.

Peat.—New York ranked eighth of 22 States that produced peat in 1984. Four companies (two less than in 1983) mined peat from four operations in Broome, Cattaraugus, Dutchess, and Westchester Counties. Both reed sedge and humus were produced primarily for soil improvement and potting soil. A demonstration project to mine and burn peat at the Fort Drum Military Reservation continued to be evaluated. The project, sponsored by the New York State Energy Research Development Authority, was an effort to evaluate the State's renewable energy resources. To date, test borings, water sampling, and survey work have been undertaken at the project site.

Perlite (Expanded).—Crude perlite mined in other States was expanded by Buffalo Perlite Corp., a division of Pine Hill Concrete Mix Corp., Erie County, and by Solite International Corp., Rensselaer County. Both output and value rebounded in 1984, increasing 26% and 35%, respectively. The expanded perlite was primarily used in lightweight acoustical building plaster, loose-fill insulation, soil conditioning, and for filtration.

Salt.—New York ranked third in the Nation in salt output, after Louisiana and Texas. Production totaled 5.6 million short tons valued at nearly $124 million, reflecting an increase of 16% in quantity and 24% in value. Both rock salt and brine were produced by four companies at five operations in five counties. Rock salt, used primarily for snow and ice removal, was produced by Cargill Inc. in Tomkins County and by International Salt Co. in Livingston County. Brine was produced at one operation—Allied Chemical, Onondaga County. Evaporated salt was produced by Cargill and International Salt, each operating a plant in Schuyler County, and by Morton Thiokol Inc., at a plant in Wyoming County. The brine was primarily used in the manufacture of soda ash, chlorine, and other chemicals.

In March, International Salt's Retsof salt mine, Livingston County, became the first deep salt mine in North America to produce 100 million tons of rock salt. The mine has been in continuous operation since 1885. Most of the rock salt mined at Retsof is shipped in bulk by rail for use in highway ice removal and as an essential raw material for the chloralkali chemical industry.

In October, Du Pont Chemical Corp., a subsidiary of E. I. duPont de Nemours & Co. Inc., and Olin Chemical Co., a subsidiary of Olin Corp., began test drilling at four sites near the village of Wyoming to evaluate the salt brine potential of the area. The test wells will be approximately 30 feet deep and 500 feet apart.

Sand and Gravel.—*Construction.*—Construction sand and gravel production is surveyed by the U.S. Bureau of Mines for even-numbered years only; therefore, this chapter contains only estimates for 1983. Data for odd-numbered years are based on annual company estimates made before yearend.

Output of construction sand and gravel increased nearly 39% in 1984 compared with the 1983 level, reflecting increased contract construction in residential, nonresidential, highway, and public projects.

In 1984, 379 companies and government agencies mined construction sand and gravel from 478 operations in 53 counties. Leading counties in order of output were Suffolk, Nassau, Cattaraugus, and Dutchess. Main uses for the material were for road base and coverings, concrete aggregate, and fill.

Table 4.—New York: Construction sand and gravel sold or used in 1984, by major use category

Use	Quantity (thousand short tons)	Value (thousands)	Value per ton
Concrete aggregate	3,849	$15,041	$3.91
Plaster and gunite sands	150	586	3.91
Concrete products	468	1,362	2.91
Asphaltic concrete	1,692	6,372	3.77
Road base and coverings[1]	3,921	10,195	2.60
Fill	2,088	4,220	2.02
Snow and ice control	1,321	3,217	2.43
Railroad ballast	(2)	(2)	2.00
Other[3]	12,479	39,872	3.20
Total or average	25,968	[4]80,866	3.11

[1]Includes road and other stabilization (cement).
[2]Less than 1/2 unit.
[3]Includes roofing granules and other unspecified uses.
[4]Data do not add to total shown because of independent rounding.

Industrial.—Whitehead Bros. Co. was the only industrial sand producer in New York in 1984. The company operated one pit in Saratoga County. Major sales were for glassmaking, moldings, and foundry purposes.

Slag—Iron.—Buffalo Crushed Stone Corp. was the only company that processed air-cooled iron (blast furnace) slag in 1984. Main uses for the slag were for road base, asphaltic concrete aggregates, fill, and railroad ballast.

Sodium Carbonate (Synthetic).—New York was the only State that produced synthetic sodium carbonate in 1984. Allied Chemical mined a chemical-grade limestone at its Jamesville quarry south of Syracuse and shipped the limestone to its Solvay-process plant in Solvay situated west of Syracuse. Synthetic sodium carbonate was used primarily in glass, chemical, detergent, and paper manufacture; for leather tanning; and for water treatment. At yearend, Allied Chemical sold its sodium bicarbonate facility at its synthetic soda ash plant to Church & Dwight Co.

Stone.—Stone production is surveyed by the U.S. Bureau of Mines for odd-numbered years only; therefore, this chapter contains only estimates for 1984. Data for even-numbered years are based on annual company estimates made before yearend.

Crushed.—Estimated crushed stone production totaled 33.1 million short tons valued at $135 million, nearly the same as that of 1983. Limestone was the leading type of crushed stone produced. Other types included traprock, sandstone, granite, and dolomite. Main uses for the crushed stone were for road base, bituminous aggregate, cement manufacture, and fill.

Dimension.—The survey of dimension stone producers was not conducted in 1984 since data is collected only for odd-numbered years. The preliminary survey for 1984, which collected production information on a sample basis for the first 9 months only, was used to generate the State's preliminary estimates. Based on these estimates, dimension stone production in 1984 amounted to 14,859 short tons (184,200 cubic feet). Types of stone quarried were sandstone, granite, and slate.

Talc.—New York ranked fourth of 11 States that produced talc in 1984. The Gouverneur Talc Co. Inc., a subsidiary of R. T. Vanderbilt Co. Inc., was the only producer in the State. The company mined a steeply dipping massive white tremolite-talc ore body approximately 300 feet wide. The ore was used primarily for ceramics and paint additives.

During the year, the New York State Department of Health launched a $150,000 investigation to determine whether workers in the talc mines of St. Lawrence County were being disabled from exposure of toxic elements in the mines. The study will try to determine whether there is a link between a high incidence of lung disease in the area and talc mining.

Vermiculite (Exfoliated).—W. R. Grace & Co. exfoliated crude vermiculite shipped in from out of State at its plant in Weedsport, Cayuga County. In 1983, both output and value decreased 9% and 8%, respectively, compared with those of 1983. The exfoliated vermiculite was primarily used for loose-fill insulation, block insulation, horticulture, lightweight concrete aggregate, and soil conditioning.

Wollastonite.—New York led the Nation

in the production of wollastonite, accounting for virtually all of the Nation's output. A small amount was also produced in California. Two companies mined wollastonite in the State in 1984. NYCO, a division of Processed Minerals and leading world supplier of this unique mineral, operated both an underground mine and surface operation in Essex County. NYCO's surface operation (Lewis Mine), which began development in 1982, was expected to replace the underground Willsboro Mine, which was near depletion. At the Lewis operation, the company installed a 300-short-ton-per-hour portable crushing system. The crushed ore was trucked 14 miles to the mill at Willsboro. The State's other producer, R. T. Vanderbilt, operated the Valentine underground mine in Lewis County. Major uses of wollastonite are as a filler in ceramic tile, marine wallboard, paint, plastics, and refractory liners in steel mills.

METALS

Aluminum.—In 1984, New York ranked third in output and value among the 17 States that had primary aluminum production facilities. Although output was nearly the same, value increased nearly 5%. Primary aluminum was produced by two companies, both in Massena, St. Lawrence County. Aluminum Co. of America (Alcoa) operated a 226,000-short-ton-per-year smelter, and Reynolds Metals Co. operated a 126,000-ton-per-year smelter. Both smelters operated at full capacity throughout the year.

During the year, Alcoa earmarked between $20 million and $25 million annually over the next 5 years for capital expenditures in facility modernization, principally in automation and new technology. A new continuous caster and rod rolling mill under construction was expected to come onstream in January 1985. The new caster would produce nonconductor redraw rod for the cable mill of Alcoa Conductor Products Co., also in Massena.

Ferroalloys.—New York was 1 of 17 States that produced ferroalloys in 1984. The State's three producers, all in Niagara Falls, were Elkem Metals Co., SKW Alloys Inc., and Union Carbide, Metals Div.

Iron Ore.—Stockpiled byproduct magnetite from NL Industries' MacIntyre Mine continued to be shipped by rail mainly for use in coal preparation plants. Estimates of the stockpiled magnetite from the mine, closed since 1982, were 5 to 6 million short tons of ore.

Iron and Steel.—In 1984, both pig iron shipments and raw steel production decreased substantially, the result of Bethlehem Steel Corp.'s closure of the massive Lackawanna plant near Buffalo. The plant at one time produced 13 million short tons of raw steel annually and employed nearly 21,000 workers. Raw steel production decreased from 1.3 million tons in 1983 to 0.5 million tons in 1984.

At yearend, Republic Steel Corp. wrote off its idled Buffalo plant. The integrated plant, which produced bar products and semifinished steel, was idled in 1982. The mill had one blast furnace and a basic oxygen process furnace shop. A coke facility there, 50% owned by Republic, has also been idle since 1982.

In March, Al Tech Specialty Steel Corp. started operating a new two-strand billet caster at its Watervliet melt shop. The caster, which cost $7.5 million, was expected to increase production and cut costs of producing billets for the company's 14-inch rolling and rod mills at Dunkirk. In addition, Al Tech announced that it would start a $6.5 million capital improvements program at its Watervliet and Dunkirk plants. Plans called for a new tube reducer, revamping of its 21-inch mill, installation of new electric controls at its bar and rod mill, and installation of new finishing equipment.

Early in the year, Allegheny Ludlum Steel Corp. acquired the assets of the shuttered Guterl Special Steel Corp. for $9.5 million at a court-ordered auction, putting the specialty steelmaker into the vacuum melted superalloy and high-temperature metals business. No timetable for the start-up of the facility was established, but Allegheny Ludlum estimated that 60 to 90 days would be required to commission the equipment and staff the plant. Guterl Special Steel, which once employed 1,200 workers at its plant, and its parent, Guterl Steel Corp., filed for reorganization bankruptcy in August 1982. The sale had to be approved by the U.S. Department of Defense because some of the specialty steel products made at the plant were used by the nuclear industry.

In February, Cyprus Corp. approved an $8 million program for the modernization of facilities at the company-owned Special Metals Corp., a New Hartford, NY-based, producer of superalloys. The melting, finishing, and inspection facilities and research

and development activities were scheduled to be included in the modernization project. The company made superalloys and other specialty metals for aerospace and other industries.

Lead and Silver.—Lead was recovered as a byproduct of zinc mining operations of the St. Joe Resources Co., a unit of Fluor Corp., at Balmat. Both output and value increased in 1984. Silver, also recovered during the lead processing, increased in output.

Table 5.—New York: Mine production (recoverable) of silver, lead, and zinc

		1983	1984
Mines producing: Lode		3	2
Material sold or treated: Zinc ore	thousand short tons	683	W
Production:			
Quantity:			
Silver	troy ounces	33,137	W
Lead	metric tons	1,299	W
Zinc	do.	56,748	W
Value:			
Silver	thousands	$379	W
Lead	do.	$621	W
Zinc	do.	$51,783	W
Total	do.	$52,783	W

W Withheld to avoid disclosing company proprietary data.

Titanium Concentrate.—NL Industries ceased ilmenite production at its Tahawus facility in Essex County, the result of the 1982 closure of its titanium dioxide pigment plant in Sayreville, NJ. However, some stockpiled material was shipped during 1984.

Zinc.—In 1984, New York ranked second in zinc output, up from third place in 1983. Tennessee continued as the leading producer in the Nation. St. Joe Resources, the sole producer in the State, operated two mines (Balmat and Pierrepont) in St. Lawrence County. In 1984, the Balmat Mine became the Nation's leading zinc mine in terms of total output; the Pierrepont Mine ranked seventh. All ore was milled at the company's Balmat mill, which had an ore milling capacity of 4,300 short tons per day. Zinc recovery was about 94% with a concentrate grade of about 58% zinc. The concentrates were mainly processed at the company's zinc smelter at Monaca, PA. Concentrates in excess of smelter requirements were sold to other zinc producers or refined to metal for St. Joe Resources under tolling agreements with other companies. The company's zinc metal is used primarily in galvanizing and in brass and bronze fabrication.[2]

[1]State Mineral Officer, Bureau of Mines, Pittsburgh, PA.

[2]Fluor Corp. Security and Exchange Commission 1984 Form 10-K. Pp. 10-11.

Table 6.—Principal producers

Commodity and company	Address	Type of activity	County
Abrasives (manufactured):			
General Abrasives Div. of Dresser Industries Inc.	2000 College Ave. Niagara Falls, NY 14305	Plant	Niagara.
Pellets Inc	531 South Niagara St. Tonawanda, NY 14150	do	Erie.
Sohio Electro Minerals Co.[1]	Box 423 Niagara Falls, NY 14302	do	Niagara.
Aluminum (primary):			
Aluminum Co. of America	1210 Alcoa Bldg. Pittsburgh, PA 15222	Smelter	St. Lawrence.
Reynolds Metals Co	Box 27003-2A Richmond, VA 23215	do	Do.
Cement:			
Atlantic Cement Co. Inc., a subsidiary of Newmont Mining Corp.[2]	Box 30 Stamford, CT 06904	Quarry and plant.	Albany.
The Glens Falls Portland Cement Co. Inc., a subsidiary of Moore McCormack Resources Inc.[2]	Box 440 Glens Falls, NY 12801	Quarries and plants.	Schoharie and Warren.
Lehigh Portland Cement Co.[2]	718 Hamilton Mall Allentown, PA 18105	Quarry and plant.	Greene.
St. Lawrence Cement Inc	Mount Royal Quebec, Canada	do	Do.
Clays:			
Norlite Corp., a subsidiary of P. J. Keating Co.	Box 367 Fitchburg, MD 01420	Pit	Albany.
Northeast Solite Corp., a subsidiary of Solite Corp.	Box 27211 Richmond, VA 23261	Pit	Ulster.
Powell & Minnock Inc., a subsidiary of General Dynamics Corp.	Coeymans, NY 12045	Pits	Do.
Emery:			
De Luca Emery Mine Inc	929 Constant Ave. Peekskill, NY 10566	Pit	Westchester.
John Leardi Emery Mine	Gillman Lane Peekskill, NY 10566	Pit	Do.
Garnet:			
Barton Mines Corp	North Creek, NY 12853	Pit and plant	Warren.
Gypsum:			
Georgia-Pacific Corp	Box 105605 133 Peachtree St., NE. Atlanta, GA 30348	Plant	Westchester.
National Gypsum Co	2001 Rexford Rd. Charlotte, NC 28211	do	Rensselaer.
United States Gypsum Co	101 South Wacker Dr. Chicago, IL 60606	Underground mines and plants.	Genesee and Rockland.
Iron ore:			
NL Industries Inc	Tahawus, NY 12879	Pit	Essex.
Lime:			
Allied Chemical Corp.[3 4]	Box 70 Morristown, NJ 07960	Quarry and plant.	Onondaga.
Peat:			
Good Earth Organics Corp	5960 Broadway Lancaster, NY 14086	Bog	Cattaraugus.
Hyponex Corp	20135 Anthony Blvd. Fort Wayne, IN 46803	Bog	Dutchess.
Perlite (expanded):			
Buffalo Perlite Corp	100 Sugg Rd. Buffalo, NY 14225	Plant	Erie.
Solite International Corp	6 Madison St. Troy, NY 12181	do	Rensselaer.
Salt:			
Cargill Inc	Box 5621 Minneapolis, MN 55440	Underground mine.	Tompkins.
International Salt Co	Clarks Summit, PA 18411	Underground mines.	Livingston and Schuyler.
Morton Thiokol Inc	110 North Wacker Dr. Chicago, IL 60606	Well	Wyoming.
Sand and gravel:			
Broad Hollow Estates Inc	Box 483 Farmingdale, NY 11735	Pit	Suffolk.
Buffalo Crushed Stone Inc	861K Wherle Dr. Williamsville, NY 14221	Pits	Allegany and Cattaraugus.
McCormack Sand Co	Box 448 Port Washington, NY 11050	Pit	Nassau.
Slag—iron:			
Buffalo Crushed Stone Corp.[3]	2544 Clinton St. Buffalo, NY 14216	Plant	Erie.

See footnotes at end of table.

Table 6.—Principal producers —Continued

Commodity and company	Address	Type of activity	County
Stone (1983):			
Crushed:			
The General Crushed Stone Co., a subsidiary of Koppers Co. Inc.	Box 231 Easton, PA 18042	Quarries	Herkimer, Jefferson, Livingston, Onondaga, Ontario, Wayne.
New York Trap Rock Corp., a subsidiary of Lone Star Industries Inc.	Box 432 Montvale, NJ 07645	Quarry	Rockland.
Dimension:			
Heldeberg Bluestone & Marble Co	Box 36 East Berne, NY 12059	Quarries	Albany and Delaware.
Hilltop Slate Co	Middle Granville, NY 12849	Quarry	Washington.
Johnson & Rhodes Bluestone Co	East Branch, NY 13756	do	Delaware.
Lake Placid Granite Co	202 South 3d Ave. Cold Spring, MN 56320	do	Essex.
Medina Sandstone Quarry Inc	8875 Quarry Rd. Niagara Falls, NY 14304	do	Orleans.
Ritchie Bros. Slate Co. Inc	Main St. Middle Granville, NY 12849	Quarries	Washington.
Stone Culture Inc	Box 43, Route 111 Alcove, NY 12007	do	Albany.
Talc:			
Gouverneur Talc Co. Inc., a subsidiary of R. T. Vanderbilt Co. Inc.	Box 89 Gouverneur, NY 13642	Underground mine.	St. Lawrence.
Wollastonite:			
NYCO Div. of Processed Minerals Inc.[5]	Box 368 Willsboro, NY 12996	Surface mine	Essex.
R. T. Vanderbilt Co. Inc	30 Winfield St. Norwalk, CT 06855	Underground mine.	Lewis.
Zinc:			
St. Joe Resources Co.[6]	7733 Forsyth Blvd. Clayton, MD 63105	Underground mines.	St. Lawrence.

[1]Also synthetic mullite and synthetic graphite.
[3]Also clays.
[3]Also stone.
[4]Also salt.
[5]Also garnet.
[6]Also byproduct lead and silver.

* U.S. GOVERNMENT PRINTING OFFICE: 1986-491-457:20119